ATC Globe

Published for the Customers of Aberdeen Test Center

Volume 6, No. 3 • December 2000
www.atc.army.mil

In this Issue…

World's Largest Flat-track Roadway Simulator

From the ATC Commander

by Colonel Andrew G. Ellis ATC Commander, Aberdeen Test Center

Let me begin by wishing you and your families a joyous Holiday Season.

Last year, ATC faced some very turbulent times. But through the hard work of our people and through the support of our customers, we ended the year on a positive note. First, we won the government bid on CA1 with an MEO implementation in March. The reduction-in-force was conducted and the good news was that not one ATC employee was adversely removed from the rolls. More good news in April—the CA2 Study was withdrawn. Finally, with the current and projected workload the need to further reduce the workforce has been eliminated. This is great news for ATC and we thank our customers for helping us.

ATC remains on the cutting edge and is a vital link to the Army's transformation process. One example and a huge success this year was completing the Brigade Combat Team's bid sample for the family of Interim Armored Vehicles. This high profile event was successfully completed on time and gathered the right information to support the down select. The testament to our workforce was that four months of testing was done in 30-days.

Second, the Army's Tactical Unmanned Aerial Vehicle completed contractor developmental testing at Phillips Army Airfield. This project was unique and entered previously uncharted territory for ATC.

Third, the Family of Medium Tactical Vehicles (FMTV) conducted the first ever test of military vehicles to complete a full-scale, 22-year accelerated corrosion and durability test. This test was an industry first, and involved partnering with the Army Research Laboratory, Project Manager-FMTV, and private industry. The success of this test exemplifies the true meaning of teamwork.

Last, we broke ground on our latest state-of-art technology venture, the Roadway Simulator. This innovation supports acquisition reform and will pave the way for reducing test costs while continuing to support our mission of providing our warfighters with the best and safest equipment possible.

All in all, this past year proved to be a successful one for ATC. Your support is greatly appreciated as we look forward to a New Year. My pledge, as always, is that ATC provide you with the best possible support and service. ●

Technical Director's Corner

by Jim Fasig Technical Director, Aberdeen Test Center

Happy Holidays!

Clearly, this is a time when most of us reflect on the past year's accomplishments and shortfalls. Moreover, we then set goals and plans for the future. So let's look at the tally sheet and try to get a perspective on the future.

We opened two new facilities: the Fire Safety Test Enclosure and the Corrosion Facility.

We started work on three new initiatives: the Roadway Simulator, the Bridge Crossing Simulator, and the Land/Sea Vulnerability Complex improvement.

We met the challenge of the Interim Armor Vehicle (IAV) bid sample test.

We opened a new mine test complex and started work on the Vehicle Mine Detection Center.

Our new concept for information acquisition, flow, and mining—Versatile Information System Online (VISION) has been successfully tested on the IAV test and parts of the FMTV testing. VISION is a pioneering approach to treat information holistically, thereby enabling decision makers instant access to information, data, and reports to help them meet their challenging assignment.

We obtained ISO 9000 certification for our pressure gauge calibration laboratory.

And finally, we have navigated through the personnel downsizing minefield and have stabilized the workforce to meet your future needs.

On the debit side, we recognize that improvement is required.

- We need to get reports to our customers faster.
- We need to do more with ISO 9000 laboratory certification.
- We need to build back more technical capability through multi-skill training for our workforce.
- We need to provide VISION to all our customers.
- We need to find ways to reduce the cost of testing.
- We need to provide you with suggestions on the best test technologies.

So, as the year ends, we at ATC have a lot to be proud of and many important challenges ahead to make ATC a better service provider to you—our customers. ●

In an effort to make you familiar with our new leadership, the ATC Globe is featuring a close-up look at the people who were selected to fill three core leader and six team chief vacant positions in July 2000.

Meet

John R. Wallace...
Director of the Automotive Core

The mission of the Automotive Core is to plan, execute, and report on tests of ground vehicles, vehicle-mounted weapons, fire control systems, and ancillary automotive items.

John was born in Lowell, West Virginia, in September 1944. After obtaining his Bachelor of Science degree in Electrical Engineering from West Virginia Institute of Technology in 1968, he began his federal career in 1968 with the Material Testing Directorate (now ATC), APG, Maryland, as an Electrical Engineer specializing in instrumentation.

He has served as an instrumentation and project engineer on a wide variety of automotive and fire control test programs. Since 1987, he has held technical management positions in ATC including Chief, Instrumentation Design and Methodology Branch; Chief, Combat Vehicles Division; Chief, Automotive Test Division; and Chief, Automotive Instrumentation Team.

With his extensive background in the development and the utilization of instrumentation, John serves as the ATC representative to the Range Commander's Council for Frequency Management and (since 1983) as the U.S. representative for developing international (four-nation) test procedures for combat vehicle fire control.

John is married with three children and resides in Street, Maryland. He enjoys gardening, hunting, fishing, and golfing.

Meet

Michael (Mike) J. Zwiebel...
Director of the Technology Core

Prior to this position, Mike was the Chief of the Instrumentation Development Team. As Instrumentation Development Team Chief, he managed ATC's technology investment program, which focused on the expansion and exploitation of state-of-the-art test instrumentation technology to benefit test and evaluation of Army Materiel. The team consisted of over 30 highly skilled engineers, scientists, and technicians with a cross section of technical expertise that models the test workload of ATC. He has over 18 years of experience as a project engineer in the development of computer and video-based instrumentation systems. His primary contributions are in the automation of test processes through application of computer-based digital data and image acquisition and processing equipment. He has served as a member of the Range Commander's Council Optical Systems Group and was a member of a four-nation (UK, US, GE, FR) Working Group of Experts in Optical-Electronics for the development of internationally standard test procedures. He has worked on several technology transfer initiatives with the U.S. Department of Transportation; Maryland State Police; Changwon Proving Ground, Republic of Korea; and Karlsborg Proving Ground, Kingdom of Sweden.

Mike was born and raised in Wilkes-Barre, Pennsylvania, where he went on to attend Wilkes University. He currently holds a Bachelor of Science degree in Electrical Engineering from Wilkes

continued on page 4

ATC Globe

On the Cover
Greg Schultz, chief designer of the Roadway Simulator, gestures to a graphic of the system at the September groundbreaking ceremony.

The ATC Globe is published by offset reproduction with a circulation of 1,000. Publishing office is the Test Business Development Team, Aberdeen Test Center, Aberdeen Proving Ground, MD 21005-5059, DSN 298-3779, commercial (410) 278-3779. Views and opinions expressed herein are not necessarily those of the Department of the Army.

Commander *COL Andrew G. Ellis* Technical Director *James W. Fasig*
Editor *Vonnie Hughey* Design *International Imaging Center*

University and has pursued graduate studies in Electro-Optics at the University of Delaware.

Mike currently resides in Bel Air, Maryland, with his wife, Dina, and their two children Jenna and Julie. His activities outside of work include gardening, home improvements, running, and golf.

Meet

John B. Ruhl...
Director of the Warfighter Core

Before John became Director of the Warfighter Core, he was detailed to the Developmental Test Command Headquarters as the Project Manager for the Versatile Information System, Integrated, On-line (VISION). John has been assigned to ATC since 1979 and has held various positions including Test Director for the Bradley Fighting Vehicle and other automotive projects; Chief of the Operations and Analysis Division; Executive Officer; and Chief of the Computer Engineering Division.

John is also a Lieutenant Colonel, Armor Branch, with a reserve assignment at the Army Research Laboratory (ARL). His active duty assignments were at Fort Knox, the 8th Cavalry in Germany, and APG. A graduate of the U.S. Army Command and General Staff College, he has a Master of Science degree in Operations Research from University of Baltimore and Masters of Business Administration and a Master of Finance degree from Loyola College. John is Level III certified in test and evaluation in both the military and civilian Acquisition Corps.

John was born in Baltimore, Maryland, and currently resides in Forest Hill, Maryland, with his wife, Sherrie, and their two children, John Jr. and Charlotte.

Meet

Robert (Bob) C. Schnell...
Chief of the Large Caliber Team, Firepower Core

Bob was born in Erie, Pennsylvania. After receiving his Bachelor of Science degree in Mechanical Engineering from Pennsylvania State University in 1982, he began his government civilian service career at ATC. From 1982 through 1990, he was a Test Director in the Field Artillery Branch, working with numerous towed and tracked artillery systems. In 1990, Bob assumed the position of Chief of the Small Arms Branch, ATC. After more than six years in the Small Arms Branch, he moved to his current position in the Large Caliber Team. He is responsible for test and analysis of large caliber weapons and ammunition from the developmental stage through to production and disposal. This generally includes tank and artillery systems, 105-mm and up.

Bob and his wife, Penny, have four children: Erin Renee, Megan Lynne, Kevin Joseph, and Kristen Audrey. He is active in the Mount Zion United Methodist Church and works with children in the Pioneer Clubs Organization. Hobbies include family activities, reading, and basketball.

Meet

Dennis C. Graham...
Chief of the Soldier Systems Team, Warfighter Core

Dennis has held this position since January 1998. In this period, he successfully integrated several diverse organizational elements into a cohesive business unit that is responsible for testing a multidisciplinary array of materiel commodities ranging from electrical generators to tactical bridging and individual soldier equipment to command and control systems, and for providing joint-service transportability test services.

Dennis was born in Abingdon, Virginia. He graduated from Mount Rogers High School, working in the hills of southwest Virginia as a tobacco cutter and Christmas tree grower to support his college education. Dennis graduated from Virginia Polytechnic Institute and State University in 1983 with a Bachelor of Science degree in Electrical Engineering.

He began his government career as a Test Director with ATC that same year. Dennis accepted an appointment shortly afterwards as the Lead Test Director of all test projects under the Army's Tactical Quiet Generator (TQG) program. In this role, he oversaw the successful completion of numerous and often concurrently enacted test projects with values typically exceeding several million ATC test dollars and spanning the duration of TQG development. Dennis also established ATC as the premier tester of power generation equipment and developed for ATC a lasting, cordial relationship with the organization responsible for the acquisition of all Department of Defense power systems, the Project Manager-Mobile Electric Power. These achievements, underwritten with his technical and managerial skills, earned him one of the first GS-13 Senior Test Directorships allotted within ATC.

continued on page 5

From April 1993 until his current assignment, he held the office of Chief, Fixed Equipment Branch, one of the two subordinate branches of the ATC Support Equipment Division, which with the addition of other organizational elements evolved into the Soldier Systems Team during ATC reorganization in1998. Under his leadership, the Soldier Systems Team evolved from its focus on traditional testing to encompass a broad spectrum of military and commercial customers.

Dennis has achieved senior (Level III) certification for the U.S. Army Acquisition Corps, is a three-time recipient of the Commander's Award for Civilian Service from 1990 through 1998, and has participated on many committees to facilitate process improvements in ATC. He resides in Bel Air, Maryland, with his three children: Matt, Mark, and Holly.

Meet

Michael (Mike) P. Schulz...
Chief of the Vulnerability/ Lethality Team, Survivability/ Lethality Core

Mike is responsible for overseeing the efforts of engineers and technicians in planning, conducting, and reporting programs designed to evaluate the vulnerability and lethality of U.S. and foreign systems. He also has responsibility for several unique Army facilities dedicated to the vulnerability/lethality mission, including the Depleted Uranium Containment Facility and the AA5 Vulnerability/Lethality Test Range.

Mike has more than 16 years of experience with ATC in the research, development, test, and evaluation of military systems. His government career began in 1984 and his initial efforts included tests of combat vehicle armor and fire suppression systems. He participated in the early tests of the Bradley Fighting Vehicle and the subsequent Bradley Live Fire Test. Following these efforts, in 1987 through 1988 he was responsible for Live Fire Test operations, reporting directly to the Test and Evaluation Command Officer-in-Charge. As Live Fire testing became institutionalized in test and evaluation, he had responsibility for directing a team, and subsequently a branch, in a wide spectrum of vulnerability and lethality programs, including OSD-sponsored Joint Live Fire and Congressionally mandated Live Fire Test programs. In 1997, he served as the first Program Manager for Emissions Testing at the Military Environmental Technology Demonstration Center (METDC). At METDC, he oversaw the development of facilities and methodologies that have given the Army the capability to quantify the firing point emissions from a broad range of weapons and munitions. In July 2000, he returned to the vulnerability/lethality arena as Chief of the Vulnerability/ Lethality Team.

Mike has authored and co-authored numerous technical publications, such as Test Operations Procedures and International Test Operations Procedures. He was an author on the Department of Army Guidelines to Live Fire Testing. He has served on the FR/GE/UK/US Vulnerability/ Lethality Working Group of Experts on Vulnerability/Lethality Testing and he has appeared in television documentaries on vulnerability testing on both the Discovery Channel and the Learning Channel. His awards include the Developmental Test Command's Edward H. Gamble Award and the Army Achievement Medal for Civilian Service.

Mike graduated from University of Maryland College Park in 1984 with a Bachelor of Science degree in Mechanical Engineering. He has completed some post-graduate courses in Business Administration, working towards a Master's degree at University of Delaware.

Meet

John M. Kopczynski...
Chief of the Maritime Team in the Survivability/Lethality Core

John is responsible for overseeing the efforts of a diverse group of engineers, technicians, and multi-skilled wage grade workers in planning, conducting, and reporting programs in support of the U.S. Navy, private industry, foreign governments, and academia. These programs are designed to evaluate the survivability, vulnerability, and lethality of different maritime systems. He is also responsible for several unique Army facilities dedicated to support the Navy testing mission, including the Underwater Explosion (UNDEX) Test Facility (UTF), the Briar Point Test Complex (the UNDEX Pond, Internal Blast Test Site, and the Surface Ship Systems Survivability (S4) Test Site), and Aircraft Vulnerability Airbase Ranges 3 and 4.

John has over 16 years experience (with 10 years in a supervisory position) at ATC in the research, development, test, and evaluation arena. He began his government

continued on page 6

career in 1984 and worked for three years testing new Navy structure designs for surface ship systems. In 1987 through 1988, he was a Project Engineer involved with the Army's Congressionally mandated Bradley Live Fire Test. From 1988 through 1990, he was responsible for test operations on the OSD Joint Live Fire T-72 Ballistic Shock Test and the subsequent Live Fire Test. During this time, he was also responsible for test operations on the OSD Joint Live Fire M60A3 program and the Army's Congressionally mandated Dragon Live Fire program. In 1990, he managed the Navy/Lethality Team that encompassed all of ATC's Navy-supported survivability programs and the Army's Live Fire Lethality programs. He served as the Branch Chief for the Sea Systems Test Branch from 1993 through 1997. He has served as the Maritime Team Chief from 1998 to the present. During his 10 years working with Navy programs, he has provided oversight to his team in support of many Navy top survivability programs, including the SEAWOLF and VIRGINIA class submarine component UNDEX shock tests, the new DD21 Class Destroyer structural testing, the Arleigh Burke Class Guided Destroyer structural testing, and the USS OSPREY MHC-51 Ship shock test.

John has authored and co-authored numerous technical publications. He also co-authored a paper titled "A Methodology for Live Fire Vulnerability Testing," based on lessons learned from the Bradley and Abrams Live Fire Tests. He is primarily responsible as the Army's lead in support of the Navy for conduct of the UNDEX shock qualification testing. He serves as ATC's liaison to the Navy for testing issues at ATC. He has received numerous awards and citations for program recognition. In 1990, he received the ATC Commander's Award in recognition of the most outstanding technical achievements in support of ATC.

John graduated from University of Maryland College Park in 1984 with a Bachelor of Science degree in Mechanical Engineering. He is also a candidate in the Master of Science in Management program at Florida Institute of Technology.

Meet

Craig L. Turner...
Chief of the Automotive Instrumentation Team, Automotive Core

In this position, Craig supervises a team of approximately 80 engineers and engineering technicians who provide field data acquisition, data processing, and analysis support to the Automotive Core customers.

Born in Pennsylvania in 1961, he received a Bachelor of Science degree in Mechanical Engineering from Pennsylvania State University in 1983. In December 1983, he began his career as a Test Director in the Wheeled Vehicle Branch of the Material Testing Directorate (since renamed as ATC). For 10 years, he managed test programs of a variety of wheeled and tracked automotive equipment, such as the Heavy Expanded Mobility Tactical Truck (HEMTT), Heavy Equipment Transporter System (HETS), Bradley high-survivability vehicles, and the M88A1E1 medium recovery vehicle.

In 1993, Craig joined the Automotive Instrumentation Team as a Senior Automotive Test Engineer, responsible for field data acquisition, data analysis, and reporting during testing of military systems such as the Family of Medium Tactical Vehicles (FMTV) and various tracked and wheeled foreign vehicle systems. He has participated in numerous commercial testing efforts, such as the development of the ATC Automotive Impact Facility (automotive crash testing) and the validation of SAE vehicle testing standards. Craig most recently performed a test to validate a liquid tanker (liquid sloshing) vehicle dynamics model, developed in a partnership with the College of Mechanical Engineering of West Virginia University. This project also included the partnering of ATC and ARL to develop a stereo visualization of the tractor and semitrailer tanker, which are positioned and articulated with actual field test data, and a secure, Internet-accessible automotive database running on an ARL supercomputer.

Craig enjoys auto racing and restoration, motorcycling, and home renovation as hobbies. He and his wife, Tara, reside in Bel Air, Maryland.

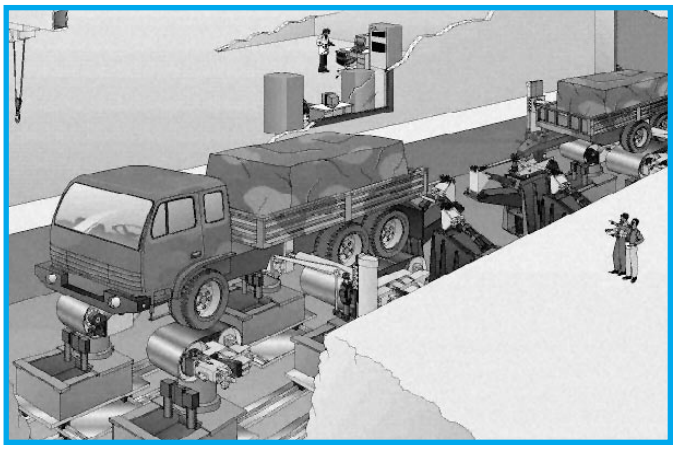
Meet

Kenneth (Ken) L. Hudson...
Chief of the Military Environmental Technology Demonstration Center (METDC) of the Survivability/Lethality Core

The mission of METDC is to demonstrate and validate environmental technologies and guidance to support the military mission. This includes validating technologies necessary to enable range sustain-

continued on page 14

Roadway Simulator To Be Built at APG



Military officials, industry representatives, and political leaders took part in a groundbreaking ceremony for the Aberdeen Test Center's 37 million dollar roadway simulator at Aberdeen Proving Ground September 25, 2000.

In remarks during the ceremony, Brigadier General Dean Ertwine, commander of the U.S. Army Developmental Test Command (DTC), lauded the planned facility as a unique and valuable national asset, not only for the Army and Department of Defense, but also for other federal agencies, universities conducting research in automotive engineering and safety, vehicle manufacturers, and the state of Maryland.

When completed, the new APG facility will be the world's largest flat-track roadway simulator. ATC and other users will be able to employ the simulator to operate and test vehicles ranging in size from passenger cars to tractor-trailer rigs in a controlled laboratory environment. With the aid of computer programming to create varying driving conditions such as speed, grades, curves, and bumps, the simulator will enable testers to collect data on vehicle performance and safety. It will help testers determine such vehicle characteristics as braking, steering, handling, stability, fuel economy, emissions, power-train performance, vibration, and ride quality. The simulator is expected to provide this type of data in hours rather than months, significantly reducing testing time and costs.

The project is being developed in three phases. The initial phase will involve designing, manufacturing, and installing a simulator capable of testing two-axle vehicles up to 13 tons of gross vehicle weight.

The second phase of the project will provide the Army and Department of Defense with the capability of testing vehicles as large as trucks with tandem rear axles and a gross vehicle weight up to 30 tons.

The third phase of the project will increase the simulator's capability to test tractor-trailer combinations with gross vehicle weights as high as 40 tons.

ATC's parent command, DTC, joined the test center in providing about 1.5 million dollars for project year 1999. Congress appropriated about 10 million dollars for project year 2000 and some 12 million dollars for project year 2001. An estimated 13.5 million dollars is still needed to bring the project to its final phase.

Lieutenant Colonel Thomas Manley of the U.S. Marine Corps Systems Command, a program manager for Marine Corps ground transportation systems, emphasized the importance of facilities such as the roadway simulator to U.S. military forces. "Our warfighters are the sons and daughters of the nation, and we put them in these (military) vehicles right out of high school," he said. "We need to ensure that they get the safest equipment that we can put in their hands."

Lieutenant Colonel Manley said he recognizes the simulator's value in helping the Marine Corps make improvements to its vehicles and the simulator's potential to enable government and the private sector to work jointly on testing. The roadway simulator will save money and time by enabling program managers and manufacturers to obtain vehicle safety and performance data in the early phases of vehicle development. "This will allow us to check the safety of early prototypes and will be a great tool for risk reduction," he said.

Brigadier General Ertwine also underscored the importance of close partnerships with government agencies, universities, and private industry and spoke of the simulator's value in helping the military obtain safer, better-performing, and more reliable equipment for soldiers.

The first phase of the project is scheduled for completion within the next 16 months.

Article provided by Mike Cast, DTC Public Affairs Office. ●

ATC Wins the 2000 Harford Award for Technology

Aberdeen Test Center was recently recognized as one of five winners of the prestigious Harford Award, a cooperative recognition given by the Harford County government, Harford County Chamber of Commerce, and Harford Community College. The Harford Award is presented with the following criteria in mind: business growth, increased employment, service to the community, sensitivity to the environment, creative business strategies, technology innovation, support of public/private education, and efforts to enhance Harford County's business climate. Winners were selected in five categories: Industrial, Nonprofit, Service, Retail, and Technology.

Colonel Drew Ellis, ATC commander, accepted the award in the technology category. ATC's partnering and technology transfer initiatives are leveraging intellectual properties, instrumentation, and facilities to provide cutting-edge technologies and state-of-the-art equipment and facilities to both ATC and its partners - a win-win for all concerned.

"I am pleased to accept this award, along with my technical director, Jim Fasig, on behalf of a dedicated and hard-working group of people - the ATC workforce - they deserve the recognition," stated Colonel Ellis. "We just broke ground on a new, state-of-the-art facility - the roadway simulator - that will be the largest flat-track simulator in the U.S. We will all benefit from this technology by providing safer equipment to our soldiers on the battlefield as well as provide safer highways for our families to travel."

The ceremony included a video tribute to each category winner. Several hundred were in attendance, including Senator Robert Hooper; Delegates Chuck Boutin and Joanne Parrott; the Honorable James Harkins, County Executive; Mayor Phil Barker of Havre de Grace; and Harford County Council members.

Article provided by Phyllis J. DeFranks, ATC Public Affairs Office. ●

ATC Renews Partnership with Army Environmental Center

ATC and the U.S. Army Environmental Center (USAEC) once again formalized their partnership through the annual renewal of the Memorandum of Agreement (MOA). ATC and USAEC have a long-standing relationship to provide the Army and Department of Defense with effective and impartial environmental technology demonstrations, testing and evaluations, and technology transfer activities.

ATC's commander, Colonel Andrew G. Ellis, and USAEC's commander, Colonel Stanley H. Lillie, renewed the MOA in an event hosted by ATC on October 23, 2000. The event was a culmination of an ATC facilities tour and a review of ongoing ATC/USAEC programs.

The MOA continues the necessary support and structure to help implement the Army Environmental Quality Technology process, Range XXI program, and Installation 2010 vision. The MOA does not modify either agency's assigned missions, responsibilities, or functions but rather complements each other's strengths and capabilities.

ATC supplies USAEC with a variety of testing capabilities, facilities, and industrial operations to test and evaluate a wide variety of innovative environmental technologies. ATC and USAEC interaction is initiated through program managers at ATC's Military Environmental Technology Demonstration Center (METDC). This team approach provides USAEC with cost-effective, thorough, and professional technology demonstrations.

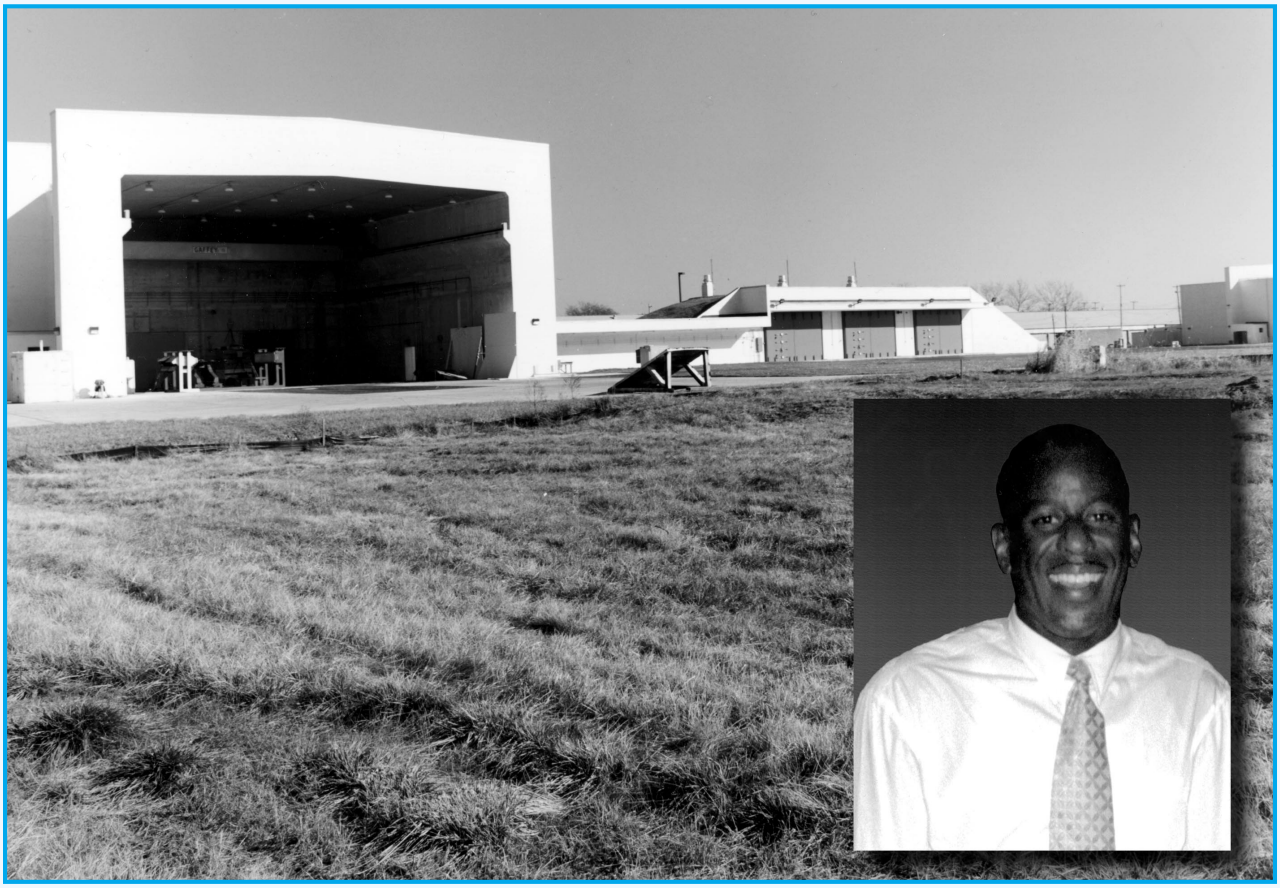
ATC offers USAEC complete test, evaluation and technology transfer services, to include deriving test protocols; developing test plans; executing technical tests, test analysis, and information management; and transferring results and conclusions to aid the warfighter.

USAEC provides centralized management, oversight, coordination, and execution of Army-wide environmental programs. USAEC devotes resources and expertise to environmental technology demonstration and transfer program management. USAEC's unique combination of technical and management expertise enhances readiness and training, improves soldier's well-being, and provides sound stewardship of the environment.

USAEC and ATC have partnered in the past to perform environmental technology demonstra-

continued on page 14

Dedication Of
Melvin E. Jackson Barricade And Control Room



On July 21, 2000, ATC dedicated the Main Front Barricade 1 and its associated Control Room in memory of a beloved and respected colleague – Melvin E. Jackson. The ceremony was attended by Melvin's immediate family and by high-ranking officials of the Department of Defense and the U.S. Army.

Mr. Jackson passed away unexpectedly on October 22, 1999. He left behind an impressive legacy of dedicated service to the nation and its warfighters. Melvin was hired by the Department of Defense in 1985; upon completing the U.S. Army Materiel Command (AMC) School of Engineering and Logistics at the Red River Army Depot in Texarkana, Texas, he was assigned to ATC.

At ATC, he made a number of significant contributions. Jackson was the Lead Test Director in testing and producing the M900 projectile, a 105-mm projectile urgently needed by M1 Abrams tanks during Operations Desert Shield and Desert Storm. This testing occurred at ATC's Main Front direct fire test facilities.

Jackson had a direct role in upgrading and enhancing the technical capabilities in direct fire ammunition testing through a concept known as Test Site Integration. Test Site Integration seamlessly integrates a number of disparate data acquisitions systems, used in direct fire testing, to one computer monitor for the test customer in real time.

Jackson was instrumental in the successful completion of the new Main Front Firing Barricades; the inside design of the barricade control rooms is a testament to his attention to detail and commitment to

continued on page 10

providing a world-class testing facility for ATC customers.

Jackson helped devise a multiskill initiative called the Cell Concept. Through this concept, he fielded a lean, technically versed, quick-reaction, cost-effective unit for direct fire testing at ATC's new Main Front Firing Barricades.

Jackson was instrumental in the successful completion of the new Main Front Firing Barricades; the inside design of the barricade control rooms is a testament to his attention to detail and commitment to providing a world-class testing facility for ATC customers.

This team clearly showed how testing must be conducted now and in the future: the testing must be technically rigid and disciplined yet cost effective.

In 1995, Mr. John Bolino (who preceded Dr. Patricia Sanders as the Director, Test Systems Engineering and Evaluation at the Office of the Secretary of Defense (OSD)) asked ATC to provide personnel assistance to his office in executing his mission. Jackson volunteered for the position in November 1995 and served in this capacity through July 1999.

At OSD, as previously at ATC, Jackson made a number of significant contributions. He was charged with submitting recommendations for nuclear effects simulators and a hypervelocity wind tunnel at the U.S. Naval Surface Warfare Center in White Oak, Maryland, which was slated to close as part of Base Realignment and Closure (BRAC). Jackson recommended that the nuclear effects simulators be closed and the wind tunnel be transferred to the U.S. Air Force, with institutional operating funds to be provided by the users. The funding recommendation was unprecedented and controversial; however, the recommendations were accepted and approved.

Jackson was charged with determining Department of Defense requirements for nuclear weapon effect simulators and devising an organizational structure to support these simulators. Jackson's recommendation to transfer the simulators to the Defense Threat Reduction Agency was executed.

Finally, Jackson was tasked to lead a team to develop a strategy to reduce the time and cost of publishing the Department of Defense In-House Research, Development, Test, and Evaluation (RDT&E) Activities Report. Jackson's team developed a plan which collected report data through a dedicated World-Wide Web site. The site was constructed with a Web-enabled relational database with on-line query capabilities. The effort cut the cost of this key report by 50 percent; the Department of Defense considered this action so significant that the team was awarded Vice President Gore's National Performance Reviews Hammer Award in November 1998.

As long as ATC remains a cornerstone in the test and evaluation mission of the Department of Defense, Melvin Jackson will be remembered as one of its brightest stars.

In less than 15 years of government service, Melvin Jackson compiled an impressive list of accomplishments. As long as ATC remains a cornerstone in the test and evaluation mission of the Department of Defense, Melvin Jackson will be remembered as one of its brightest stars.

Article provided by Harry Cunningham, Director of the Command Staff. ●

ATC Support of Intelligent Vehicle Initiative

ATC is supporting one of the Department of Transportation (DOT) Intelligent Vehicle Initiatives (IVIs). The goal of the IVI program is to increase safety on the nation's highways through deployment and use of on-vehicle safety devices. Working through a cooperative research agreement with Volvo Trucks North America (VTNA), ATC's Versatile Information System On-line (VISION) Team and Automotive Instrumentation Team (AIT) are providing data acquisition and archiving services. The 3-year, 100-vehicle, nationwide operational test will allow DOT; VTNA; their evaluator, the Battelle Memorial Foundation; and a commercial fleet, U.S. Xpress, to understand the required technical performance, user acceptance issues, and benefits of collision countermeasures.

The goal of the IVI program is to increase safety on the nation's highways through deployment and use of on-vehicle safety devices.

Background Through previous research, the National Highway Transportation Safety Administration (NHTSA) was able to develop initial estimates which show that rear-end, lane-change, and roadway departure crash avoidance systems have the potential, collectively, to reduce motor vehicle crashes by one-sixth,

continued on page 12

We want to hear from you! Tell us what additional equipment, facilities, instrumentation and services ATC needs to serve you better. In order to ensure our customers are receiving the best service from ATC, we ask you to provide your comments and recommendations using our return address or e-mail address
business@atc.army.mil
or our web address
www.atc.army.mil

Address Changed?
Want to be added to the mailing list?
Write to: Commander
USAATC
Attn CSTE-DTC-AT-CS
400 Colleran Road
APG MD 21005-5059

or about 1.1 million crashes annually. Such systems may take the form of warnings or recommending control actions as well as introducing temporary or partial automated control of the vehicle in hazardous situations. DOT has combined these efforts into one program, the IVI. Research has been focused on eight safety-related areas: rear-end collisions, roadway departure collisions, lane-change and merge collisions, intersection collisions, driver impairment monitoring, vision enhancement, vehicle stability, and safety impacting systems. The areas of research are also divided among light (cars), transit (city busses), specialty (snowplows), and commercial vehicles.

Commercial vehicles are heavy trucks and interstate busses. The problem areas for these types of vehicles are well defined and documented. Commercial vehicles will leverage the performance specifications being developed for the light vehicle program for rear-end, lane-change/merge, roadway departure, and intersection collision avoidance. The commercial vehicle platform will lead the research in drowsy driver, rollover, and stability-related crashes; intelligent diagnostics; and electronic braking. The VTNA portion of the research emphasizes adaptive cruise control, rear-end collision warning, and implementation of electronic braking systems. Electronic braking systems are being fielded for the first time in the United States.

ATC Data Acquisition System (DAS) The VISION Team is continually developing data acquisition systems to meet U.S. Army test requirements, since commercial off-the-shelf equipment does not always meet the requirements. The most recent effort, part of the VISION program, has improved on past systems by implementing information management and network models, in addition to hardware upgrades. The Advanced Distributed Modular Acquisition System (ADMAS) is composed of multiple devices which are small and rugged. The DAS for the IVI project is a modification of an ADMAS device. The DAS hardware consists of a 486 PC-104 form factor computer with data acquisition and communications interfaces. The computer utilizes a real-time operating system and stores the application program and data in solid-state media. The system includes a cellular modem, PCMCIA 220-Mbyte flash memory card, and an uninterruptible power supply (UPS) in a rugged aluminum enclosure (fig. 1).

Figure 1: IVI Data Acquisition System (DAS).

DAS Capabilities The DAS software was tailored for the IVI performance specifications. The specifications require that specific parameters from three vehicle data busses be monitored and recorded along with analog sensor inputs and Global Positioning System (GPS) receiver parameters. Data are then stored in solid-state media until retrieved through the cellular modem. Each DAS will be called daily and data extracted to a computer system at ATC. Final archiving and databasing of the data will occur at the Major Shared Resource Center (MSRC) at the U.S. Army Research Laboratory (ARL), Aberdeen Proving Ground, Maryland.

The data bus interfaces are the SAE J1939, SAE J1708, and the VORAD Collision Warning System (CWS) data bus. The DAS also has a 16-channel analog input capacity; IVI will use 3 channels. The longitudinal and lateral accelerations of the truck body are measured by accelerometers integrated to the DAS package. A third analog input is a string potentiometer situated to measure steering wheel position. The GPS information is acquired by monitoring and recording the serial data from a GPS receiver. This data source provides time and position data. Some parameters, such as road speed and following distance, are recorded continuously in a histogram format. This provides the evaluator a statistical overview of the environment which the vehicle experienced. Other parameters are monitored continuously in a circular data buffer. The circular data buffer is an area in memory that temporarily stores a specified amount of data. If specified limits are exceeded, then a trigger event is created. When the trigger event occurs, the previous 10 seconds of data will be stored permanently along with the values at the trigger time and 5 seconds of data after the trigger event.

IVI Application The DAS software works with a configuration file.

continued on page 13

The configuration file describes which parameters to record, how to record the data, and the trigger conditions. In the IVI application, the vehicle speed, longitudinal force, throttle, engine brake, service brake, cruise control, following interval and time-to-collision are programmed. The vehicle speed, throttle, engine brake, service brake, and cruise control parameters are obtained from the vehicle's SAE J1939 data bus; the force measurement is from an accelerometer built into the DAS; and the following interval and time-to-collision parameters are derived from the VORAD data bus. The following interval, longitudinal acceleration, and steering position rates are monitored for out-of limit-conditions. When a limit condition is exceeded, a trigger event occurs. The DAS software will record the parameters mentioned and 12 additional parameters in a time history format that defines the activity of the vehicle and the driver. Data are acquired at a rate of six samples per second. Data is stored on a 32-Mbyte disk-on-chip (DOC), which will hold about two months of data. The data stored on the DOC will be accessed over the cellular data link. The PCMCIA flash memory card acts as a redundant data archive.

An automated computer program "calls" each DAS unit every day to retrieve the data files created. The "harvesting" routine establishes a dial-up-network connection and then uses a File Transfer Protocol (FTP) program to transfer the data files from the solid-state memory of the DAS. After a file has been harvested and verified, the file is erased from the DAS. The files are then transferred to the MSRC and loaded into an Oracle database. Each file identifies the vehicle, location, and time in addition to the parameters recorded. The data are customer accessible from a secure connection through an Internet browser.

...ATC's customers will not only have the opportunity to remotely acquire data from an unprecedented large fleet operation, but will also be able to interact with the data via their desktop computers as the test progresses.

A combination of Java server pages (JSP), servlets, and applications is being developed to aid the user in accessing the required data in report or download format. Because the chosen database is one of the industry leaders, there exist many third-party tools available to aid in the manipulation of the data. Some of the identified requirements are composite histograms, histogram comparisons from similar events, and time history comparisons from similar events.

With this powerful combination of innovative data acquisition hardware and software tools, ATC's customers will not only have the opportunity to remotely acquire data from an unprecedented large fleet operation, but will also be able to interact with the data via their desktop computers as the test progresses.

ATC is working to import lessons learned from this program into all other vehicle test programs underway at the test center. Multiple military vehicle demonstrations of these data acquisition and communication techniques are currently planned for FY01.

For additional information, contact Luigi Mastrippolito at DSN 298-7736, commercial 410-278-7736, e-mail: lmastrip@atc.army.mil. ●

Shadow 200 TUAV System's First Successful Automatic Landings

continued from page 16

AAI will manufacture and provide support for four low-rate initial production TUAV systems (Block I), which the Army will put through initial operational test and evaluation. AAI is on schedule to deliver the first of the four systems in November. After that, the Army has options to purchase between 6 and 10 additional production systems. Currently, the Army plans to have a total inventory of 44 TUAV systems. Full-rate production is expected to be authorized in the fall of 2001. A Block I Shadow 200 system consists of three air vehicles with payloads, two ground control stations, one portable ground control station, one air vehicle transport vehicle, launch/recovery equipment (a hydraulic launcher, arresting gear, and automatic landing system), one troop carrier for personnel and equipment, and logistics support elements for system deployment. ●

ATC Honors Employees at Ceremony

Fifty-three employees of the Aberdeen Test Center nominated by their peers for exceptional performance were honored recently at an Awards Ceremony at the Post Theater.

Colonel Andrew G. Ellis, ATC commander, said to the work force of more than 550 that "all of you are winners here today. I'm proud we're on the same team. Keep up the good work."

The **Commander's Quality Award** was presented to an ATC work group or team for continued high-quality achievements. The **Army Pulse Radiation Facility Staff** (APRF) (Craig R. Heimbach, Patricia A. Powers, David A. O'Steen, Michael B. Stanka, John W. Gerdes, Henry G. Dubyoski, David A. Keelin, Bruce D. Cable, William F. Leavitt, Denver C. Miser, Mark A. Oliver, David L. Mattson, and Frances A. Bentley) earned the award for "outstanding support and dedication to the APRF," said Charles D. Valz, Director of the Survivability/Lethality Core. "Through turbulent times the APRF team persevered, resulting in a positive outcome for this unique facility–its doors would remain open. The team's pride of ownership and dedication to keep this national asset available was truly evident during the decision-making process."

continued on page 15

Meet the New Team Leadership

continued from page 6

ment and simultaneously meet the Department of Defense environmental stewardship requirements as well as ensuring the "greening" of our Nation's weapon systems does not decrease their effectiveness.

Ken was born in Havre De Grace, Maryland, in 1965. He began his government career in 1982, working part-time for the U.S. Army Materiel Systems Analysis Activity (AMSAA) while a high school senior . Through college, he continued to work part-time for AMSAA as a mathematics aide supporting wargame simulations. Upon graduation with a Bachelor of Science degree in Mechanical Engineering from University of Maryland College Park in 1988, he began his career with the U.S. Army Combat Systems Test Activity (now ATC) as a test director in the Close Combat Vehicles Directorate. Ken gained automotive and fire control testing experience while progressing to serve as ATC's Bradley Fighting Vehicle System Test Team Leader.

In 1992, Ken moved to ATC's Environmental Office to add a tester's perspective to the compliance staff. Experience was gained across the environmental compliance spectrum (hazardous waste, wastewater, pollution prevention, environmental planning, air, stormwater). In 1994, coursework was completed for a Master of Environmental Engineering degree from Johns Hopkins University. In 1995, Ken co-authored the METDC concept to leverage our understanding of environmental compliance requirements with ATC's traditional testing capabilities to demonstrate and validate environmental technologies. Ken directed the first METDC test in 1996 (Closed Loop Washrack Demonstration). METDC's staff has grown from a test director staff of 2 to over 30 engineers, scientists, and technicians managing and executing over 10 million dollars of test work annually. Ken and the METDC staff look forward to working with you in the future to meet your environmental challenges. ●

ATC Renews Partnership with Army Environmental Center

continued from page 8

tions. ATC's demonstration support encompasses the Army's four environmental pillars of Restoration, Pollution Prevention, Conservation, and Compliance. Examples of projects which have been undertaken include Alternative Cleaner Performance Validation, Fire-Resistant Hydraulic Fluid Recycling, Oil/Water Separation, Washrack Recycle Treatment System Evaluation, Portable Hot Gas Decontamination, Firing Point Emission Study, Bullet Traps and Shock-Absorbing Concrete for Small Arms Ranges Evaluation, Standardized Unexploded Ordnance Test Site Establishment, and Technology Transfer and Environmental Quality Technology Program Support.

For additional information, contact Ken Hudson at DSN 298-4729, commercial 410-278-4729, e-mail: khudson@atc.army.mil. ●

The **Groak Award**, named in memory of the late George Groak, who provided facility support at APG in the '50s, was presented for exceptional work by wage-grade personnel. **Bobby H. Graybeal**, a Welder Leader in the Survivability/Lethality Core, received the award. "Mr. Graybeal is assigned the most complex, technically challenging jobs, and successfully completes them on time, under budget, and more importantly safely," said John F. Reynolds, Metal Processing Work Supervisor. "His recent accomplishments are the Flammable Liquid Storeroom for the Naval Research Laboratory, the fragmentation shield at the Fire Safety Test Enclosure, and currently the Bridge Crossing Simulator," he said. "That is a great testimony that customers request him to accomplish their most complex projects."

The **Crozier Award** was presented to **Sergeant Aaron Cress** from the Warfighter Core. Named for the late Major General William Crozier, Army Chief of Ordnance from 1901 through 1917, the award is presented to a soldier for excellence in technical test project management and test support. "Sergeant Aaron Cress joined the Abrams Team several months ago and has since become an invaluable member coordinating soldier operator-maintainer testing and evaluation (SOMTE) support for test programs at ATC," said Todd Wagner, Cress' supervisor. "His technical expertise as an infantry soldier makes him invaluable to the test directors to ensure that the best product is sent to the soldier in the field. He demonstrates exceptional skill in all tasks assigned to him and maintains a standard of excellence in spite of an extremely heavy workload." ATC also recognized Sergeants O'Neil and Clay for their great support to ATC's SOMTE mission.

"All of you are winners here today. I'm proud we're on the same team. Keep up the good work."
—COL Ellis

The **Fritter Award**, presented to an employee who provides exceptional administrative support is named for the late Richard W. Fritter, a former ATC Budget Analyst. This year's award was presented to **Karen J. Zeto**, a Management and Program Analyst with the Resource Management Team. "During the past year, ATC has been through some very difficult issues and a significant number of personnel issues and Ms. Zeto has provided an invaluable service to every core while working manpower vacancies, promotions, and reduction-in-force mechanics," said Louise V. Beyer, the nominator. "She worked numerous personnel actions coordinating new and revised job descriptions, priority placement program lists, movement of personnel within ATC, and the requisition of new ATC employees."

The **Nichols Award**, named in memory of the late Charles W. Nichols, whose accomplishments epitomize the contributions made by ATC technicians, was presented to **Walter Andrefsky**, an Electronics Technician with the Survivability/Lethality Core. "Mr. Andrefsky is a highly respected professional in the arena of ballistics data acquisition," said Merle D. Truitt, a member of the Ballistics Instrumentation Team. "He can be relied upon for his professionalism and ingenuity in collecting the required ballistics data regardless of the testing environment," he said. "He has contributed to research projects in conjunction with the Technical Cooperation Program, recognizing his technical ballistics expertise with allied nations and with other federal agencies. His expertise in cooperation with institutions has catapulted ATC to the forefront of military medical simulant testing."

The **Commander's Award** was presented to **William W. Newton**, an Environmental Engineer with the Military Environmental Technology Demonstration Center (METDC) of the Survivability/Lethality Core. The award is presented for outstanding individual achievement on a technical project or study. "Mr. Newton's efforts have resulted in a new technical mission for ATC, the Assembled Chemical Weapons Assessment," said Kenneth L. Hudson, Chief of METDC. "ATC's entrance into the demonstration of demilitarization technologies is directly correlated to Mr. Newton's technical, project management, and marketing expertise. His efforts have resulted in 3.6 million dollars of work for ATC and have furthered the command's reputation for being able to get the job completed in a technically superior manner, on time, and within budget."

Article provided by Phyllis J. DeFranks, ATC Public Affairs Office. ●

Shadow 200 TUAV System's First Successful Automatic Landings

The Shadow 200 Tactical Unmanned Aerial Vehicle (TUAV) system has completed a series of fully automatic landings during the first trial of its TUAV Automatic Landing System (TALS). TALS enables hands-off automatic landings of the Shadow 200 air vehicles, eliminating the need for an external pilot. The initial TALS landings took place last month during a 1.8-hour flight test at the Philips Army Airfield at Aberdeen Test Center.

"The Shadow air vehicle and ground control systems accomplished three 'touch and go' landings and one final automatic landing during the touch-down phase of the extensive automatic landing system trials,'' said Steve Reid, the Shadow 200 program manager for AAI Corporation. "The landings were all very smooth and accurate.''

Continued testing of TALS is currently being conducted as the Shadow 200 system concludes its three-month initial integration and flight test program. The first in a new generation of TUAV systems, the Shadow 200 TUAV system is being developed to provide battlefield and peacekeeping mission intelligence for U.S. Army brigade commanders. Reconnaissance, surveillance, and battlefield damage intelligence will be delivered from the air vehicle's electronic payloads directly to the tactical command center. Led by prime contractor AAI Corporation, the Shadow 200 team includes Raytheon, United Defense, Camber Corporation, and D.P. Associates. The Shadow 200 is being developed from a heritage of technically mature and operationally proven UAVs, including the Pioneer UAV system and AAI Shadow 200, 400, and 600 UAV systems.

continued on page 13

ATC
Globe

Commander
USAATC
Attn CSTE-DTC-AT-CS
400 Colleran Road
APG MD 21005-5059

Visit the ATC web site at www.atc.army.mil